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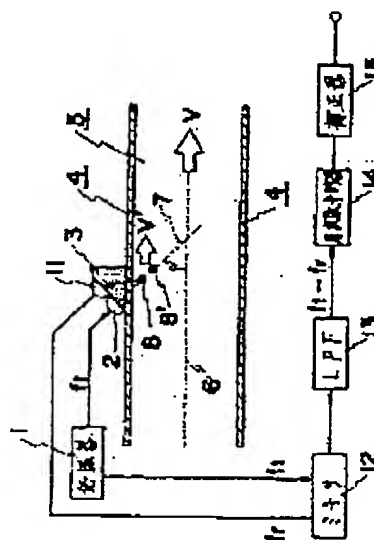
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(54) ULTRASONIC CURRENT AND FLOW METER UTILIZING DOPPLER'S SHIFT

(57)Abstract:

PURPOSE: To enable measurement of current velocity of fluid having high pollution concentration by measuring the current velocity of the fluid to be measured in the vicinity of a tubular wall by utilizing the Doppler's shift of an ultrasonic signal reflected from solid particles passing the vicinity of the wall of a conduit.

CONSTITUTION: Ultrasonic wave is generated from a transmission transducer 2, and this ultrasonic wave signal is transmitted in a beam having an axis 7 crossing at an angle α with respect to the central axis 6 of a conduit 4 through a plastic wedge 3. The ultrasonic wave signal thus transmitted collides with solid particles 8 passing the vicinity of the tubular wall of the conduit 4, and is partially received by a receiving transducer 11 upon reflection. The received signal is applied through a mixer 12, a low pass filter 13, a frequency discriminator 14 to a correcting unit 15 to become an output voltage representing the mean current velocity.



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